

R E M A R K S

The office action of September 23, 2004 has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is requested. Claims 1 through 34 are cancelled by this response. Claims 35 through 85 are added by this response and remain in this case. Support for the newly added claims is found in the specification and no new matter has been added.

Preliminary Remarks

- a. The claims have been completely replaced, in order to better focus on the invention presented in the application as filed. Specifically,
 - i. New claim 35 is directed to a device for collecting data, as in old claim 1, in the embodiment using a single accelerometer. Of the claims dependent upon claim 35, new claim 36 is equivalent to old claim 2, new claim 43 is equivalent to old claim 5, and new claims 45-48 are derived from old claims 6-9, respectively.
 - ii. New claim 56 is directed to a system for collecting data on small arms, using the device as claimed in new claim 35.
 - iii. New claims 57-64 are directed to a method of collecting small-arms usage data, by using the single accelerometer as claimed in apparatus claim 35.
 - iv. New claims 65-85 are directed to a device for collecting data, in the embodiment using an RF detector as a sensor rather than the accelerometer of claims 35-55, with claims 66-85 being parallel to claims 36-55.
- b. The numbered paragraphs below correspond to the numbered paragraphs in the Office Action.
- c. The nonpublication request filed with this application has been rescinded by form filed by fax on November 30, 2004.

Rejection(s) under 35 U.S.C. §112

2. Claim 31 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

Applicant has cancelled claim 31, rendering the rejection moot. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection(s) under 35 U.S.C. §102

4. Claims 15-18, 20, 21, 23, 24, 24, 29, 30, and 33-35 were rejected under 35 U.S.C. 102(b) as being anticipated by US 5,402,678 to Fritz et al.

The rejected claims have been replaced. Applicant believes the new claims are patentable over Fritz, et al. Specifically, Fritz uses a proximity sensor (4) to sense the physical position of the breech-block of the fire arm. New Claims 35-64 of the present invention claim the use of a single accelerometer sensing the signals resulting from firing, and claims 65-95 claim the use of an RF sensor to sense radio signals resulting from the firing. Fritz does not teach or suggest sensing conditions (acceleration or RF) resulting from firing.

Therefore, it is respectfully suggested that the rejection the claims as being anticipated by Fritz, et al, is overcome. Reconsideration and withdrawal of the rejection are respectfully requested.

5. Claims 15-18, 20, 21, 27, 29, and 30 were rejected under 35 U.S.C. 102(b) as being anticipated by US 5,566,486 to Brinkley.

The rejected claims have been replaced. Applicant believes the new claims are patentable over Brinkley. Specifically, Brinkley counts signals created by an inertia switch comprising a movable mass, to generate an electrical signal, such as by completing an electrical circuit, in response to each time the firearm recoils. (col. 3, lines 40-43). Brinkley discusses ignoring extraneous signals resulting from bouncing of the ball, but does not teach or discuss the problem of additional signals resulting from the action of the gun itself, with the use of a "hold-off delay

being chosen such that all subsequent impulses produced during firing a shot fall within the hold-off delay" (new claims 35-64). Brinkley also does not teach or discuss the use of an RF sensor (new claims 65-85).

Therefore, it is respectfully suggested that the rejection the claims as being anticipated by Brinkley is overcome. Reconsideration and withdrawal of the rejection are respectfully requested.

6. Claims 15, 16, 21, 23, 24, 27, 29, 30, and 32-35 were rejected under 35 U.S.C. 102(b) as being anticipated by US 6,643,968 to Glock. Applicant respectfully disagrees with the rejection.

The rejected claims have been replaced. Applicant believes the new claims are patentable over Glock. Specifically, Glock discloses a shot counter using a piezoelectric sensor and a second sensor which senses the physical location of the carriage when it slides back, so that Glock's device depends on a signal created by the shot to start the count, and a signal from physical position of the carriage to end it. Glock neither teaches nor suggests Applicant's use of a single accelerometer with a hold-off delay (new claims 35-64) or RF sensor (new claims 65-85). In fact, by using the physical carriage sensor in addition to the piezo sensor, Glock teaches away from the Applicant's invention which uses the accelerometer, as claimed in claims 35-64.

Therefore, it is respectfully suggested that the rejection the claims as being anticipated by Glock is overcome. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection(s) under 35 U.S.C. §103

8. Claims 1-9 and 10-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,541,191 to Morris et al. in view of US 20030167909A1 to Matter. Applicant respectfully disagrees.

The rejected claims have been replaced. Applicant believes the new claims are patentable over Morris, et al, in view of Matter.

Morris is a shot counter which uses a "detector module" to detect the firing of a weapon. Morris does indicate that the detector could be an accelerometer, but rather than utilize a hold-off delay as required by claims 35-64, Morris indicates that "it is to be understood that multiple detectors may be employed in series or in parallel to prevent false activation signals." (col.2, line 43) Morris does not teach or suggest use of an RF detector as required by new claims 65-85.

Matter is an automatic bolt operator for rifles, which electrically cycles the bolt, rather than using gas operation as in the prior art. It does not collect information related to shots. Matter uses a temperature sensor to control the speed of extraction, and also to control a cooling fan or the like if the barrel overheats and control a heater if the mechanism is too cold, but not to acquire information about the usage of the weapon. Matter's device does not sense a shot being fired (with a single accelerometer, RF sensor, or otherwise), but rather physically senses the trigger being pulled "The controller 50 ... responds to the trigger 42 by cycling the bolt 52 after a suitable delay for the round to exit the barrel 16." With such a mechanical actuation, there is no need for Matter to have a hold-off delay to prevent extra counts - indeed, Matter is not concerned with counting shots at all.

The combination of Morris and Matter would result in a rifle which operates its bolt by a motor when a detector module detects the weapon was fired, or a shot counter which senses shots by a physical depression of the trigger. Since neither Morris nor Matter teaches or suggests the single accelerometer and hold-off delay "chosen such that all subsequent impulses produced during firing a shot fall within the hold-off delay ", and neither teaches or suggests use of an RF detector, the combination of the two would not teach these features required by the present claims.

Reconsideration and withdrawal of the rejection are respectfully requested.

9. Claims 19, 25, 26, 28, 31, and 32 were rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,402,678 to Fritz et al. as applied to claim 15 above, and further in view of US 20030167909A1 to Matter. Applicant respectfully disagrees

For the sake of brevity, the arguments made with regard to Fritz in section 4, and Matter in section 8, above, are repeated here by reference. Suffice it to say that neither Fritz nor Matter teaches or suggests the use of an accelerometer or RF detector in a shot counter.

Fritz detects a shot by the physical movement of the breech block, and Matter is a device to move the breech block when a shot is detected. The combination of Fritz and Matter would result in a rifle which operates its bolt by a motor when a detects the trigger pull, and then counts the shot when the bolt action is operated (which would be unnecessary, since the mechanism itself was operating the bolt). Since neither Fritz nor Matter teaches or suggests the use of an accelerometer and hold-off delay "chosen such that all subsequent impulses produced during firing a shot fall within the hold-off delay ", and neither teaches or suggests use of an RF detector, the combination of the two would not teach these features required by the present claims.

Reconsideration and withdrawal of the rejection are respectfully requested.

10. Claim 22 was rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,402,678 to Fritz et al. as applied to claim 15 above, and further in view of US 6,311,682 to Rice at al. Applicant respectfully disagrees.

For the sake of brevity, the arguments made with regard to Fritz in section 4, above, are repeated here by reference. Suffice it to say that neither Fritz nor Rice teaches or suggests the use of an accelerometer or RF detector in a shot counter.

Rice is a paintball gun with a built-in processor which can control the rate of fire, etc. In the Rice device there is no accelerometer or RF sensor to detect firing or any need for such - "operation of the gun is initiated by a user depressing a trigger 2 which acts upon a microswitch in known manner." (col. 2, lines 1-3). The processor may record various parameters based on shots fired, but it is the processor which fires the gun which also records the data, so there is no need to detect a shot - the processor caused the shot in the first place.

Fritz detects a shot by the physical movement of the breech block, and Rice is a device to fire a paintball gun. The combination of Fritz and Matter would result in Fritz, basically - a shot counter which physically detects that the weapon has been fired (by bolt position from Fritz, or

by trigger microswitch from Rice). Since neither Fritz nor Rice teaches or suggests the use of an accelerometer and hold-off delay "chosen such that all subsequent impulses produced during firing a shot fall within the hold-off delay ", and neither teaches or suggests use of an RF detector, the combination of the two would not teach these features required by the present claims.

Reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

Applicant believes the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' attorney would advance the prosecution of the case to finality, he is invited to telephone the undersigned at the number given below.

"Recognizing that Internet communications are not secured, I hereby authorize the PTO to communicate with me concerning any subject matter of this application by electronic mail. I understand that a copy of these communications will be made of record in the application file."

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Dated: December 20, 2004

Amendments to the Drawings:

The attached sheet(s) of drawings include changes as listed below. The attached replacement sheet(s) replace the original sheet(s).

The changes are as follows.

Page 3/12 is amended to reverse the labels for figures 5 and 6, to match the detailed description as filed.

Page 5/12 was erroneously filed with two copies of the same bar graph (figure 8A, rounds fired vs. firing interval). The page has been corrected to change the second figure on the page to the 8B graph of rounds fire vs. barrel temperature, as described in the specification as filed, page 14, first paragraph.

Attachment: Two Replacement Sheets